

REMARKS

Claims 1-12 are pending in this application. Attached hereto is a complete listing of all claims in the application, with their current status listed parenthetically. By this Response, claims 2 and 8 have been cancelled in response to the Examiner's objection under 37 CFR 1.75.

Allowed claims

Applicant acknowledges with appreciation the Examiner's indication that claims 11 and 12 are allowed.

Rejection Under 35 U.S.C. § 103(a)

In paragraph 7 of the Office Action, claims 5 and 10 stand rejected as unpatentable under 35 U.S.C. § 103(a) over U.S. Patent 4,206,316 ("Burnsweig"). Applicant respectfully traverses this rejection.

A. The Law of Obviousness

In order to establish a prima facie case of obviousness, three basic criteria must be met:

"First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined), must teach or suggest all of the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on the applicant's disclosure." M.P.E.P. § 2142.

In support of the obviousness rejection, the Examiner states:

"Burnsweig does not disclose the transmission of the frames occurs in an ultra-wideband system. However, it would have been obvious for one of

ordinary skill in the art at the time of the invention to use the method of transmitting pulses disclosed above in any communication system."

The Examiner also states that Burnsweig teaches transmission of "frames" as recited in Applicant's independent claims 5 and 10.

Applicant's claims 5 and 10 both recite, in part:

". . . each bipolar pulse pair being disposed in a frame. . . the position of the positive pulse in the positive timing window encoding information within the frame. . ."

For the purpose of establishing a clear, a non-ambiguous prosecution history, Applicant defines "frames" as "a plurality of information segments." A frame preferably includes a positive timing window, a negative timing window, and a bipolar pulse pair, where the bipolar pulse pair includes a positive pulse and a negative pulse. This definition is taken from Applicant's originally-filed specification, and is found in the Summary of the Invention section (page 2, lines 39-42).

In contrast, the "frame" taught in Burnsweig is an image for portrayal on a TV screen. "In such a television system, a high power and long duration reference or sync pulse is transmitted which indicates the beginning of a frame or field of a television raster image" (col. 1, lines 29-32).

A television raster image and Applicant's "frame" are two completely different things.

Regarding the Examiner's assertion that ". . . it would have been obvious for one of ordinary skill in the art at the time of the invention to use the method of transmitting pulses disclosed above in any communication system." In this assertion, the Examiner is stating that Burnsweig teaches the transmission of pulses. This is an erroneous assertion. Actually,

Burnsweig teaches the transmission of TV signals comprising sine waves that have been modulated by a pulse position modulation (PPM) method.

"Referring now to FIGS. 21*a* and 21*b*, they represent the output waveforms of a conventional PPM system and a PPM system utilizing the first embodiment for coding the input signal. . . In FIG. 21*b*, the 6 KHz sine wave is very regular, and there is no evidence of the carrier frequency interfering with the signal. The reason for the "clean" signal is that the carrier frequency cancels as a result of the pulse position modulation of the signal" (Burnsweig, col. 19, lines 50-62).

Thus, Burnsweig transmits a conventional sine wave signal, which carries data by using a PPM modulation method.

However, Applicant's independent claims 5 and 10 both recite, in part, "transmitting an ultra wideband pulse train." That is, Applicant **does not transmit a sine wave**, but instead transmits a plurality of discrete electromagnetic pulses. This is the essence of ultra-wideband communication technology. Ultra-wideband communication technology, and its differences from conventional, continuous sinusoidal wave communications was discussed in Applicant's August 5, 2002, Response to Office Action.

Specifically, Applicant's originally-filed specification refers to the present invention as a "system and method of ultra-wideband communication" (Field of the Invention section, page 1, line 12), and also discusses the unique characteristics of ultra-wideband communication technology in the Background of the Invention section (page 1, lines 15-20).

Burnsweig contains no teaching or suggestion of an ultra-wideband communication system, and as discussed above, ultra-wideband technology functions in a completely different fashion than conventional sine wave technology.

In addition, Burnsweig does not teach transmission of "frames" as defined by Applicant. For these reasons, the obviousness rejection of independent claims 5 and 10 is respectfully traversed.

Rejection Under 35 U.S.C. § 103(a)

In paragraph 8 of the Office Action, claims 1, 3, 4, 6, 7, and 9 stand rejected as unpatentable under 35 U.S.C. § 103(a) over Burnsweig in view of U.S. Patent 3,961,203 ("Hutch"). Applicant respectfully traverses this rejection.

Hutch teaches a signal correlator for correlating pulse pairs (Abstract). One object of Hutch is to "provide an improved signal correlator for checking data signals received over a transmission line" (col. 1, lines 14-16).

Hutch contains no teaching or suggestion of transmission of a plurality of frames, nor does Hutch teach ultra-wideband communication technology. As discussed above, Burnsweig also fails to teach these claim elements, both of which are found in Applicant's independent claims 1 and 9. Thus, the addition of Hutch as a secondary reference fails to supply the elements lacking in Burnsweig.

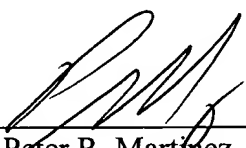
In view of the above discussion, Applicant respectfully submits that the Section 103 rejection of independent claims 1 and 9 has been traversed. Because claims 3 and 4 depend from claim 1, it is respectfully submitted that the rejection of claims 3 and 4 have been traversed by virtue of their dependency from claim 1. M.P.E.P. § 2143.03. Claims 6 and 7 depend from independent claim 5, which has been distinguished from the cited prior art above.

Conclusion

Applicant believes that this Response has addressed all items in the Office Action and now places the application in condition for allowance. Accordingly, favorable reconsideration and allowance of claims 1, 3-7 and 9-12 at an early date is solicited. Should any issues remain unresolved, the Examiner is invited to telephone the undersigned.

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